CIHM
Microfiche
Series
(Monographs)

ICMH
Collection de
microfiches
(monographies)

Canadian Institute for Historical Microreproductions / Institut canadien de microreproductions historiques

© 1991

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- ☐ Coloured covers/ Couverture de couleur
- ☐ Covers damaged/ Couverture endommagée
- ☐ Covers restored and/or laminated/ Couverture restaurée et/ou pelliculée
- ☐ Cover title missing/ Le titre de couverture manque
- ☐ Coloured maps/ Cartes géographiques en couleur
- ☐ Coloured ink (i.e. other than blue or black)/ Encre de couleur (i.e. autre que bleue ou noire)
- ☐ Coloured plates and/or illustrations/ Planches et/ou illustrations en couleur
- ☐ Bound with other material/ Relié avec d'autres documents
- ☐ Tight binding may cause shadows or distortion along interior margin/ La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure
- ☐ Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/ Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

- ☐ Coloured pages/ Pages de couleur
- ☐ Pages damaged/ Pages endommagées
- ☐ Pages restored and/or laminated/ Pages restaurées et/ou pelliculées
- ☑ Pages discoloured, stained or foxed/ Pages décolorées, tachetées ou piquées
- ☐ Pages detached/ Pages détachées
- ☑ Showthrough/ Transparence
- ☑ Quality of print varies/ Qualité inégale de l'impression
- ☐ Continuous pagination/ Pagination continue
- ☐ Includes index(es)/ Comprend un (des) index

Title on header taken from:/ Le titre de l'en-tête provient:

- ☐ Title page of issue/ Page de titre de la livraison
- ☐ Caption of issue/ Titre de départ de la livraison
- ☐ Masthead/ Générique (périodiques) de la livraison

☐ Additional comments:/ Commentaires supplémentaires:

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	12X	14X	16X	18X	20X	22X	24X	26X	28X	30X	32X
						✓					

The copy filmed here has been reproduced thanks to the generosity of:

Library of the National Archives of Canada

The images appearing here are the best quality possible considering the condition and legibility of the original copy and in keeping with the filming contract specifications.

Original copies in printed paper covers are filmed beginning with the front cover and ending on the last page with a printed or illustrated impression, or the back cover when appropriate. All other original copies are filmed beginning on the first page with a printed or illustrated impression, and ending on the last page with a printed or illustrated impression.

The last recorded frame on each microfiche shall contain the symbol ⟶ (meaning "CONTINUED"), or the symbol ▽ (meaning "END"), whichever applies.

Maps, plates, charts, etc., may be filmed at different reduction ratios. Those too large to be entirely included in one exposure are filmed beginning in the upper left hand corner, left to right and top to bottom, as many frames as required. The following diagrams illustrate the method:

L'exemplaire filmé fut reproduit grâce à la générosité de:

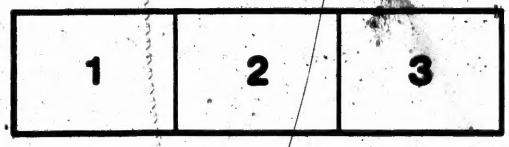
La bibliothèque des Archives nationales du Canada

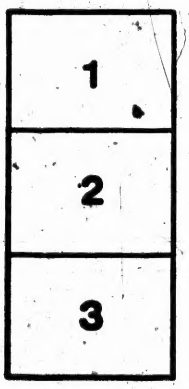
Les images suivantes ont été reproduites avec le plus grand soin, compte tenu de la condition et de la netteté de l'exemplaire filmé, et en conformité avec les conditions du contrat de filmage.

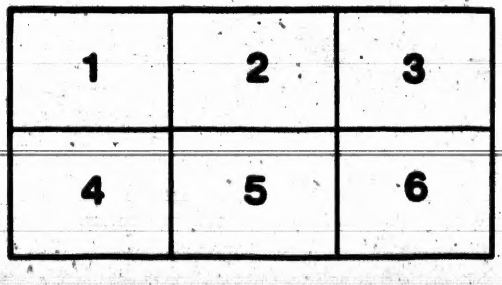
Les exemplaires originaux dont la couverture en papier est imprimée sont filmés en commençant par le premier plat et en terminant soit par la dernière page qui comporte une empreinte d'impression ou d'illustration, soit par le second plat, selon le cas. Tous les autres exemplaires originaux sont filmés en commençant par la première page qui comporte une empreinte d'impression ou d'illustration et en terminant par la dernière page qui comporte une telle empreinte.

Un des symboles suivants apparaîtra sur la dernière image de chaque microfiche, selon le cas: le symbole ⟶ signifie "A SUIVRE", le symbole ▽ signifie "FIN".

Les cartes, planches, tableaux, etc., peuvent être filmés à des taux de réduction différents. Lorsque le document est trop grand pour être reproduit en un seul cliché, il est filmé à partir de l'angle supérieur gauche, de gauche à droite, et de haut en bas, en prenant le nombre d'images nécessaire. Les diagrammes suivants illustrent la méthode.





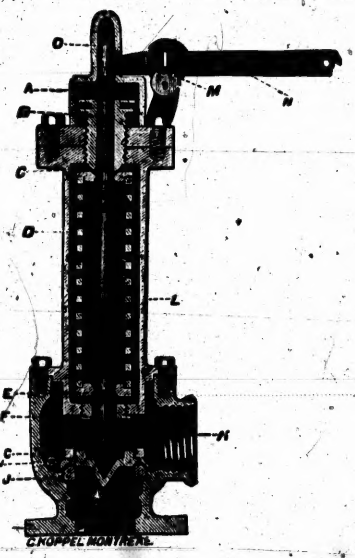


PORTEOUS'

Patent Lock-up "Pop" Safety Valve

For Locomotive, Steamboat and Stationary Boilers.

Manufactured by ROBERT MITCHELL & CO., MONTREAL.



Patented 2nd April, 1864.

This [illegible] presents one of the best and most reliable Safety Valves in the market, and are made in every respect according to the requirements of the Steamboat Inspectors Acts and Rules. It never fails to open at the pressure to which it is adjusted, and prevents any accumulation of pressure, greater than that which it is set to guard against. It will not differ more than two pounds while opening and shutting. These valves are all tested under steam, and are correctly and plainly marked to the required pressure at which the valve is wanted to pop.

B—Is the regulating screw to regulate the spring to any pressure required, and also in the event of the spring breaking, it can be screwed down and thus close the valve *G*, until steam is off, when a new spring can be inserted, thus preventing the trouble of removing the valve from its connections. When a change in the load of the valve is desired, it is effected by raising or lowering the regulating screw *B*. To take the valve apart, remove the lever *N* and cap *A* and relieve the spring *D*, by raising the regulating screw *B*. The loose ring *J* is for regulating the pop. At a high pressure, by raising the ring, it reduces the lift of the valve, and at low pressure, by screwing the ring down, will raise the valve higher.

CAUTION.

When raising steam for the first time after attaching the safety valve, be sure and raise the valve from its seat by means of the lever *N*, and let the steam blow through freely for a short time, so as to free the seat from chips and scales, that may have accumulated in the pipe and boiler. If the above precaution is neglected, and the valve should leak, it can be easily reground by taking apart as directed.

In ordering Lock-up safety valves state area of Grate Bars in boiler.

2	ft.	long	x 1	ft. 0	in.	wide,	requires 1	inch	Lock-up	Safety Valve.
2	ft.	"	x 1	ft. 6	in.	"	" 1¼	inch	"	" "
2	ft.	"	x 2	ft. 0	in.	"	" 1½	inch	"	" "
2	ft.	"	x 3	ft. 0	in.	"	" 2	inch	"	" "
4	ft.	"	x 3	ft. 0	in.	"	" 2½	inch	"	" "
4	ft.	"	x 3	ft. 6	in.	"	" 3	inch	"	" "
5	ft.	"	x 4	ft. 0	in.	"	" 3½	inch	"	" "
5	ft.	"	x 5	ft. 0	in.	"	" 4	inch	"	" "

For any other larger area of grate bars add ½ inch per square foot of bars.